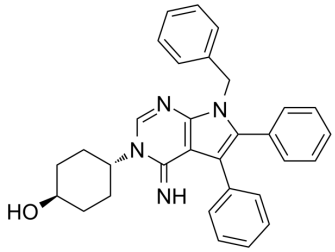
Metarrestin

Cat. No.:	HY-120118
CAS No.:	1443414-10-5
Molecular Formula:	$C_{31}H_{30}N_4O$
Molecular Weight:	474.6
Target:	DNA/RNA Synthesis
Pathway:	Cell Cycle/DNA Damage
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 2 years -20°C 1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : 31.25 mg/mL (65.84 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent / Mass / Concentration	1 mg	5 mg	10 mg
	1 mM	2.1070 mL	10.5352 mL	21.0704 mL
	5 mM	0.4214 mL	2.1070 mL	4.2141 mL
	10 mM	0.2107 mL	1.0535 mL	2.1070 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: 2.08 mg/mL (4.38 mM); Suspended solution; Need ultrasonic

BIOLOGICAL ACTIVITY

Description

Metarrestin (ML246) is an orally active, first-in-class and specific perinucleolar compartment inhibitor. Metarrestin disrupts the nucleolar structure and inhibits RNA polymerase (Pol) I transcription, at least in part by interacting with the translation elongation factor eEF1A2. Metarrestin blocks metastatic development and extends survival in mouse cancer models[1][2].

IC_{50} & Target

Perinucleolar compartment[1]

In Vitro

Metarrestin (ML246) disrupts perinucleolar compartments in PC3M-GFP-PTB cells with an IC_{50} of 0.39 μM[2].
Metarrestin (1 μM; 24 hours) reduces perinucleolar compartment prevalence in different human cancer cell lines.
Metarrestin impacts cell growth in cancer cell line PC3M but not in normal fibroblasts (GM02153)[2].
Metarrestin (0.6 μM; 24 hours) effectively blocks the invasion of PC3M and PANC1 cells[2].
Metarrestin (1 μM; 24 hours) does not significantly change the amounts of Pol I large subunit RPA194 and UBF in the three cell lines, PANC1, PC3M, and HeLa. Metarrestin shows a substantial reduction of 5'ETS RNA in cells[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo

Metarrestin (ML246; 5-25 mg/kg; IP; once daily; continuing for six weeks) displays a decrease in metastatic burden in both liver ($p < 0.01$) and lung with 25 mg/kg[2].

Metarrestin (drug-infused chow; 10 mg/kg; 70 ppm) extends survival in the NSG PANC1 pancreatic cancer metastasis mice model[2].

Metarrestin (5, 25 mg/kg; ip; for 4 additional week) reduces metastasis of prostate cancer (PC3M) and growth of metastatic breast cancer PDX mice models[2].

Metarrestin (5 and 25 mg/kg; IP) has a half-life of 4.6 to 5.5 hours[2].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	NOD/IL2 gamma (null) PANC1 mice over primary tumor tissues[2]
Dosage:	5 and 25 mg/kg
Administration:	IP; once daily; continuing for six weeks
Result:	Displayed a decrease in metastatic burden in both liver ($p < 0.01$) and lung with 25 mg/kg. Demonstrated a significant reduction of perinucleolar compartment prevalence in metastatic and primary tumor tissues.

Animal Model:	Female BALB/c mice[2]
Dosage:	5 and 25 mg/kg (Pharmacokinetic Analysis)
Administration:	IP
Result:	Indicated good exposure, distribution, and tolerability in vivo, with a half-life of 4.6 to 5.5 hours.

REFERENCES

[1]. Vilimas T, et al. Pharmacokinetic evaluation of the perinucleolar compartment disassembler metarrestin in wild-type and Pdx1-Cre;LSL-KrasG12D/+;Tp53R172H/+ (KPC) mice, a genetically engineered model of pancreatic cancer. Cancer Chemother Pharmacol. 2018 D

[2]. Frankowski KJ, et al. Metarrestin, a perinucleolar compartment inhibitor, effectively suppresses metastasis. Sci Transl Med. 2018 May 16;10(441).

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA